```
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker run --rm -d -e PING_TARGET=172.17.0.2 --name pinger delner/ping:1.0
9ab7a823963f28596fd4d06f5edde93cb9bfcec04c8ade781533c9256d5b24b1
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker ps
CONTAINER ID   IMAGE            COMMAND                  CREATED          STATUS          PORTS     NAMES
9ab7a823963f   delner/ping:1.0  "sh -c 'ping $PING_T…"   9 seconds ago    Up 6 seconds              pinger
4b225a2cfd06   delner/ping:1.0  "sh -c 'ping $PING_T…"   34 seconds ago   Up 30 seconds             dummy
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker logs pinger
PING 172.17.0.2 (172.17.0.2) 56(84) bytes of data.
64 bytes from 172.17.0.2: icmp_seq=1 ttl=64 time=0.076 ms
64 bytes from 172.17.0.2: icmp_seq=2 ttl=64 time=0.065 ms
64 bytes from 172.17.0.2: icmp_seq=3 ttl=64 time=0.054 ms
64 bytes from 172.17.0.2: icmp_seq=4 ttl=64 time=0.079 ms
64 bytes from 172.17.0.2: icmp_seq=5 ttl=64 time=0.054 ms
64 bytes from 172.17.0.2: icmp_seq=6 ttl=64 time=0.044 ms
64 bytes from 172.17.0.2: icmp_seq=7 ttl=64 time=0.103 ms
64 bytes from 172.17.0.2: icmp_seq=8 ttl=64 time=0.089 ms
64 bytes from 172.17.0.2: icmp_seq=9 ttl=64 time=0.083 ms
64 bytes from 172.17.0.2: icmp_seq=10 ttl=64 time=0.046 ms
64 bytes from 172.17.0.2: icmp_seq=11 ttl=64 time=0.086 ms
64 bytes from 172.17.0.2: icmp_seq=12 ttl=64 time=0.046 ms
```

```
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker network create hackernetwork
c7320ed9b570ca96d575b9bd8c49111ec0446247bba34cd6e35d62b2d0d22a90
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker network ls
NETWORK ID     NAME            DRIVER    SCOPE
859fe72a7eab   bridge          bridge    local
c7320ed9b570   hackernetwork   bridge    local
f20c988151a2   host            host      local
caef32afef50   none            null      local
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker network inspect hackernetwork
[
    {
        "Name": "hackernetwork",
        "Id": "c7320ed9b570ca96d575b9bd8c49111ec0446247bba34cd6e35d62b2d0d22a90",
        "Created": "2021-06-18T16:36:26.5111943Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": {},
            "Config": [
                {
                    "Subnet": "172.18.0.0/16",
                    "Gateway": "172.18.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {},
        "Options": {},
        "Labels": {}
    }
]
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker network rm hackernetwork
hackernetwork
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes>
```

1. Default networks

```
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker run --rm -d --network skynet --name dummy delner/ping:1.0
9d5ec044a7a00e40bfa0df795d7232620002e9a92d74d0c134165435fdd6e6b4
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker logs pinger
Error: No such container: pinger
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker logs dummy
PING google.com (172.217.161.142) 56(84) bytes of data.
64 bytes from 172.217.161.142: icmp_seq=1 ttl=37 time=42.4 ms
64 bytes from 172.217.161.142: icmp_seq=2 ttl=37 time=42.4 ms
64 bytes from 172.217.161.142: icmp_seq=3 ttl=37 time=40.5 ms
64 bytes from 172.217.161.142: icmp_seq=4 ttl=37 time=41.3 ms
64 bytes from 172.217.161.142: icmp_seq=5 ttl=37 time=44.7 ms
64 bytes from 172.217.161.142: icmp_seq=6 ttl=37 time=40.6 ms
64 bytes from 172.217.161.142: icmp_seq=7 ttl=37 time=42.0 ms
64 bytes from 172.217.161.142: icmp_seq=8 ttl=37 time=42.1 ms
64 bytes from 172.217.161.142: icmp_seq=9 ttl=37 time=42.6 ms
64 bytes from 172.217.161.142: icmp_seq=10 ttl=37 time=42.4 ms
64 bytes from 172.217.161.142: icmp_seq=11 ttl=37 time=40.7 ms
64 bytes from 172.217.161.142: icmp_seq=12 ttl=37 time=42.9 ms
64 bytes from 172.217.161.142: icmp_seq=13 ttl=37 time=43.4 ms
64 bytes from 172.217.161.142: icmp_seq=14 ttl=37 time=42.2 ms
64 bytes from 172.217.161.142: icmp_seq=15 ttl=37 time=43.4 ms
64 bytes from 172.217.161.142: icmp_seq=16 ttl=37 time=42.7 ms
64 bytes from 172.217.161.142: icmp_seq=17 ttl=37 time=41.4 ms
64 bytes from 172.217.161.142: icmp_seq=18 ttl=37 time=46.3 ms
64 bytes from 172.217.161.142: icmp_seq=19 ttl=37 time=41.9 ms
64 bytes from 172.217.161.142: icmp_seq=20 ttl=37 time=41.9 ms
64 bytes from 172.217.161.142: icmp_seq=21 ttl=37 time=43.3 ms
64 bytes from 172.217.161.142: icmp_seq=22 ttl=37 time=42.2 ms
64 bytes from 172.217.161.142: icmp_seq=23 ttl=37 time=64.9 ms
64 bytes from 172.217.161.142: icmp_seq=24 ttl=37 time=41.6 ms
64 bytes from 172.217.161.142: icmp_seq=25 ttl=37 time=43.0 ms
64 bytes from 172.217.161.142: icmp_seq=26 ttl=37 time=42.2 ms
64 bytes from 172.217.161.142: icmp_seq=27 ttl=37 time=41.8 ms
64 bytes from 172.217.161.142: icmp_seq=28 ttl=37 time=42.0 ms
64 bytes from 172.217.161.142: icmp_seq=29 ttl=37 time=43.1 ms
64 bytes from 172.217.161.142: icmp_seq=30 ttl=37 time=43.9 ms
```

2. Adding containers to a network

```
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker run --rm -d --name gadgetdb --network skynet -e POSTGRES_PASSWORD=password -p 5432 postgres
898e91e880fa5aa934ce383afd9a518e82de379dd94f24372f00a4d818b530bd
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker run --rm -d --name widgetdb --network skynet -e POSTGRES_PASSWORD=password -p 5432 postgres
0c7f40b3320a368044d82373e73ae7b238f0ba0bf44996cbb10653c76e62bfed
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED          STATUS          PORTS                     NAMES
0c7f40b3320a   postgres   "docker-entrypoint.s…"   4 seconds ago    Up 2 seconds    0.0.0.0:54676->5432/tcp   widgetdb
898e91e880fa   postgres   "docker-entrypoint.s…"   24 seconds ago   Up 22 seconds   0.0.0.0:54674->5432/tcp   gadgetdb
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker exec -it widgetdb /bin/bash
root@0c7f40b3320a:/# psql -U postgres
psql (13.3 (Debian 13.3-1.pgdg100+1))
Type "help" for help.

postgres=# \q
root@0c7f40b3320a:/# psql -U postgres -h gatgetdb
^C
root@0c7f40b3320a:/# psql -U postgres -h gadgetdb
Password for user postgres:
psql: error: FATAL:  password authentication failed for user "postgres"
root@0c7f40b3320a:/# psql -U postgres -h gadgetdb
Password for user postgres:
psql (13.3 (Debian 13.3-1.pgdg100+1))
Type "help" for help.

postgres=# \q
root@0c7f40b3320a:/# exit
exit
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes>
```

3. Connecting between containers in a network

```
PS C:\Users\brent\Documents\197\ME8_Containerization_and_Docker\5-volumes> docker run --rm -d --name widgetdb --network skynet -p 5432:5432 postgres
c14d7eb03639afe4e0f2b05bb9500e8a778362f588f0e86850d6816fa83ec3fb
```

4. Binding ports to a host